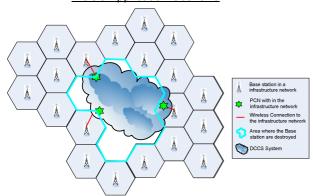
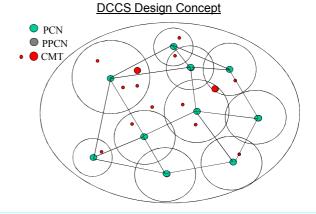
Dynamic Cellular Cognitive Radio: Rapidly Deployable Networking with DSA for **Public Safety**

DCCS Application Scenario

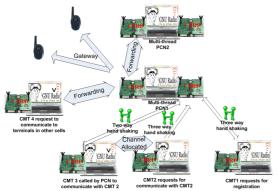




Scenario and Problem Description

- In natural disaster scenarios infrastructure is often destroyed.
- First responders have difficulty communicating with each other and with outside world.
- A control channel for DSA may be impossible or unaffordable.
- Blind competition between primary and secondary users can cause a vicious cycle on spectrum utilization .

DCCS Demo System Setup

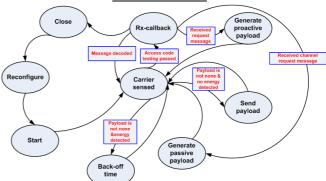


GUI for Picocell Cognitive Node (PCN)										
			Role Pla	aying (PCN or PPCN)						
t Ldst Help										
WT_		itive Wireless Technol Cognitive Radio	agy		Channel P	ange:			Start	stop
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18/168/3500	00:00:00	4	2008 10 09 16 JK	162662500	CMT1	CMT2		Direct	2008 10 09 192	1
Network Status PCN2 PCN3 PCN4	EN\od#5	(MI	Sader in Cell							

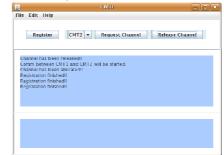
DCCS Advantage

- Spectrum for secondary users group is managed considering both efficiency and fairness.
- System is available for both infrastructure and non-infrastructure
- Communication is setup on demand at no extra cost.
- No fixed control channel is needed. No resources are consumed to maintain a control channel.
- System accommodates both cognitive and non-cognitive radios.

MAC Architecture

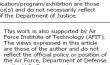


GUI for Cognitive Mobile Terminal (CMT)



Acknowledgements





Smart Radio Challenge

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Advisor: Dr. Charles W. Bostian (bostian@vt.edu)

Main Developers: Ying Wang (ywang 06@vt.edu), Qinqin Chen (chenq@vt.edu), Alex Young, Bin Li, TerryBrisebois, Sujit Nair, Xueqi Cheng, Nannan He, Gyuhyun Kwon, Rohit Rangnekar, Al Fayez, Feng Ge, Mark D. Silvius, Gladstone Marballie, Aravind Radhakrishnan

Contributors











































